

Appl. No. 10/707,817  
Response dated February 27, 2006

## AMENDMENTS TO THE CLAIMS

This listing of the claims replaces all earlier versions.

Please amend the claims as follows.

Claim 1 (original). An olefin process, comprising:

passing a light alkane stream comprising ethane, propane or a combination thereof through a steam pyrolysis zone and quenching effluent therefrom to form a pyrolysis effluent enriched in ethylene, propylene or a combination thereof;

cracking a light hydrocarbon stream comprising olefins having at least 4 carbon atoms in a first FCC zone to form a first FCC effluent enriched in ethylene, propylene or a combination thereof;

cracking a refinery stream comprising gas oil, full range gas oil, resid, or a combination thereof, in a second FCC zone to form a second FCC effluent enriched in ethylene, propylene or a combination thereof;

fractionating the first and second FCC effluents together to remove heavy naphtha, light cycle oil, slurry oil, or a combination thereof and recover a combined olefin-containing FCC fraction;

conditioning the pyrolysis effluent together with the combined FCC fraction to remove oxygenates, acid gases, water or a combination thereof to form a conditioned stream;

separating the conditioned stream into at least a tail gas stream, an ethylene product stream, a propylene product stream, a light stream comprising ethane, propane, or a combination thereof, an intermediate stream comprising olefin selected from C<sub>4</sub> to C<sub>6</sub>

Appl. No. 10/707,817  
Response dated February 27, 2006

olefins and mixtures thereof, and a heavy stream comprising C<sub>6</sub> and higher hydrocarbons;

recycling the light stream to the steam pyrolysis zone; and recycling the intermediate stream to the first FCC zone.

Claim 2 (original). The olefin process of claim 1, further comprising recycling the heavy stream to the first FCC zone.

Claim 3 (original). The olefin process of claim 1, further comprising:  
hydrotreating the heavy stream to obtain a hydrotreated stream;  
extracting a product stream comprising benzene, toluene, xylenes or a mixture thereof from the hydrotreated stream to obtain a raffinate stream lean in aromatics; and  
recycling the raffinate stream to the steam pyrolysis zone.

Claim 4 (original). The olefin process of claim 1, wherein the light alkane stream passed through the steam pyrolysis zone further comprises naphtha.

Claim 5 (original). The olefin process of claim 1, wherein the light alkane stream passed through the steam pyrolysis zone further comprises LPG.

Claim 6 (original). The olefin process of claim 1, wherein the light hydrocarbon stream cracked in the first FCC zone comprises FCC naphtha.

Claim 7 (original). The olefin process of claim 1, whercin the light hydrocarbon stream cracked in the first FCC zone comprises olefins having from 4 to 8 carbon atoms.

Claim 8 (original). The olefin process of claim 1, wherein the refinery stream cracked in the second FCC zone comprises waxy gas oil.

Appl. No. 10/707,817  
Response dated February 27, 2006

Claim 9 (withdrawn, currently amended). An olefin process unit, comprising:

parallel steam pyrolysis, light olefin FCC and gas oil-resid FCC zones for producing a combined effluent comprising ethylene and propylene, comprising: [[;]]

means for passing a light alkane stream comprising ethane, propane or a combination thereof through the steam pyrolysis zone and quenching effluent therefrom to form a pyrolysis effluent enriched in ethylene, propylene or a combination thereof;

means for cracking a light hydrocarbon stream comprising olefins having at least 4 carbon atoms in the light olefin FCC zone to form a first FCC effluent enriched in ethylene, propylene or a combination thereof;

means for cracking a refinery stream comprising gas oil, full range gas oil, resid, or a combination thereof, in a gas-oil resid FCC zone to form a second FCC effluent enriched in ethylene, propylene or a combination thereof;

means for fractionating the first and second FCC effluents together to remove heavy naphtha, light cycle oil, slurry oil, or a combination thereof and recover a combined olefin-containing FCC fraction;

means for conditioning the combined effluent comprising the pyrolysis effluent and the combined olefin-containing FCC fraction to remove oxygenates, acid gases and water to form a conditioned stream;

means for separating the conditioned stream into at least a tail gas stream, an ethylene product stream, a propylene product stream, a light stream

Appl. No. 10/707,817  
Response dated February 27, 2006

comprising ethane, propane, or a combination thereof, an intermediate stream comprising olefin selected from C<sub>4</sub> to C<sub>6</sub> olefins and mixtures thereof, and a heavy stream comprising C<sub>6</sub> and higher hydrocarbons; means for recycling the light stream to the steam pyrolysis zone; and means for recycling the intermediate stream to the first FCC zone.